

## **GB881079**

Publication Title:

Improvements in wheel castors and wheel brackets

Abstract:

Abstract of GB881079

881,079. Castors. AUTOSSET (PRODUCTION) Ltd. Aug. 5, 1958 [May 7, 1957], No.14430/57. Class 52(1) A castor bowl 1 is mounted in bell-crank levers 3 horizontally pivoted at 4 on a forked swivel head 5 and a leaf spring 8, carried by the pivot 4 is slidably engaged by pins 12 on the bell-crank lever. The upper end 9 of the leaf spring movably abuts the castor crown as in Specification 521,130.

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# PATENT SPECIFICATION

881,079



*Inventor:* CLAUDE MORTIMER TOWNSEND

*Date of filing Complete Specification:* August 5, 1958

*Application Date:* May 7, 1957.

*No.* 14430/57

*Complete Specification Published:* November 1, 1961

*Index at Acceptance:*—Class 52(1), D3.

*International Classification:*—A47b.

## COMPLETE SPECIFICATION

### DRAWINGS ATTACHED

#### Improvements in Wheel Castors and Wheel Brackets

We, AUTOSSET (PRODUCTION) LIMITED, a British Company, of 72/77 Stour Street, Birmingham 18, Warwickshire, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

In our Patent Specification No. 521,130, there is shown and described a wheel castor or wheel bracket of the kind which embodies two forks and a leaf spring device, one of the forks generally being arranged substantially vertically and either swivelled or fixed to an attachment member of the castor or bracket, the other fork being arranged substantially horizontally and pivoted at its one end about a horizontal axis to the lower end of the substantially vertical fork and provided at its other and free end with a wheel.

The spring device in our said Specification No. 521,130 was disposed obliquely between the two forks and secured at one end to the crown of the horizontal fork, its other and free end movably engaging the crown or another part of the vertical fork.

The primary object of the present invention is to provide for the evenly balanced stressing of the leaf spring throughout its length when under load and for its safe and efficient operation, and also to achieve greater flexibility for a given load, compared with that experienced with an equivalent spring device according to our said prior specification.

According to the present invention, in a castor or wheel bracket of the hereinbefore specified kind, one end of the leaf spring is connected at or near one end of the vertical fork, and the other end of the leaf spring movably engages another part of the vertical fork, the horizontal fork being formed as a bell-crank lever, one arm of which carries

the wheel and the other arm of which slidably embraces the leaf spring between the ends thereof.

The leaf spring is conveniently pivoted at its lower end about the horizontal pivot connecting the horizontal fork to the vertical fork and at its upper end movably engages the crown or another part of the vertical fork.

The leaf spring engaging arm of the horizontal fork extends upwardly and is preferably itself forked, there being two cross pins extending laterally between the forks thereof with the leaf spring disposed between the two cross pins.

The leaf spring may be movably engaged with the crown or another part of the vertical fork in the manner described in our said Specification No. 521,130.

The lower end of the leaf spring preferably has a hook embracing in pivotal manner the pivot pin connecting the vertical and horizontal forks, the hook embracing more than half of the circumference of the said pivot pin so as to be retained thereon.

For a better understanding of the invention, reference is made to the accompanying explanatory drawing which illustrates, by way of example, a wheel castor constructed according to the invention:—

Figure 1 is a side elevation, partly in section, of the castor.

Figure 2 is an end elevation of Figure 1 viewed from the left.

As will be observed in the drawing, a castor wheel 1 has a ball bearing mounting on a horizontal axis 2 upon the free end of a generally horizontal fork 3 which is pivoted on a horizontal axis 4 to the lower end of an upright fork 5 which can swivel about a vertical axis 6. The head of the castor or wheel bracket is provided with a mounting bracket 7 by which the castor or wheel bracket

ket can be attached to a variety of articles. A leaf spring 8 is disposed obliquely between the fork 5 and the fork 3, the upper end 9 of the leaf spring 8 being in contact with a ball bearing device 10 at the head of the fork 5, and the lower part is anchored to the pivotal axis 4.

The fork 3 is constructed as a bell crank lever, the upwardly directed cranks 11 thereof being provided with cross pins 12 which extend laterally between the forks 3 and 5 and embrace the leaf spring 8 in its width dimension. The advantage resulting from this construction is that the spring embracing cross pins 12 serve to provide for the evenly balanced stressing of the leaf spring 8 throughout its length when under load. Conveniently, the lower end of the leaf spring 8 has a hook 13 which pivotally engages the pivotal axis 4, the hook 13 preferably embracing at least half of the circumference of the pivotal axis 4 so as to ensure its retention thereon.

The parts indicated at 14, 15 are related to a brake operating mechanism for the wheel castor and bracket and do not form part of the invention.

It will be appreciated that the invention is not to be regarded as being restricted to the details of construction above described in connection with the example illustrated and that modifications may be made without departing from the basic ideas of the invention as expressed in the appended claims.

#### WHAT WE CLAIM IS:—

1. A castor or wheel bracket of the kind referred to, wherein one end of the leaf

spring is connected at or near one end of the vertical fork, and the other end of the leaf spring movably engages another part of the vertical fork, the horizontal fork being formed as a bell-crank lever, one arm of which carries the wheel and the other arm of which slidably embraces the leaf spring between the ends thereof.

2. A castor or wheel bracket according to claim 1, wherein the leaf spring is pivoted at its lower end about the horizontal pivot connecting the horizontal fork to the vertical fork and at its upper end movably engages the crown or another part of the vertical fork.

3. A castor or wheel bracket according to claim 1 or 2, wherein the bell-crank lever has upwardly directly forked crank arms provided with spaced cross pins extending laterally between the forks thereof with the leaf spring disposed between the two cross pins.

4. A castor or wheel bracket according to any of the preceding claims, wherein the lower end of the leaf spring has a hook which pivotally embraces the pivotal axis coupling the vertical and horizontal forks.

5. A castor or wheel bracket constructed substantially as described with reference to the accompanying drawing.

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Birmingham, 3.

### PROVISIONAL SPECIFICATION

#### Improvements in Wheel Castors and Wheel Brackets

We, AUTOSSET (PRODUCTION) LIMITED, a British Company, of 72/77 Stour Street, Birmingham 18, Warwickshire, do hereby declare this invention to be described in the following statement:—

In our Patent Specification No. 521,130, there is shown and described a wheel castor or wheel bracket of the kind which embodies two forks and a spring device, one of the forks being arranged substantially vertically and either swivelled or fixed to an attachment member of the castor or bracket, the other fork being arranged substantially horizontally and pivoted at its one end about a horizontal axis to the lower end of the substantially vertical fork and provided at its other and free end with a wheel. The spring device in our said Specification No. 521,130 was disposed obliquely between the two forks and secured at one end to the crown of the horizontal fork, its other and free end movably engaging the crown or another part of the vertical fork.

According to the present invention, a cas-

tor or wheel bracket of the hereinbefore specified kind has its spring device constituted as a leaf spring one end of which is connected at or near one end of the vertical fork, and the other end of the leaf spring movably engaging another part of the vertical fork, the horizontal fork being formed as a bell-crank lever, one arm of which carries the wheel and the other arm of which slidably embraces the leaf spring between the ends thereof.

The leaf spring is conveniently pivoted at its lower end about the horizontal pivot connecting the horizontal fork to the vertical fork and at its upper end movably engages the crown or another part of the vertical fork.

The leaf spring is preferably of laminated construction.

The leaf spring engaging arm of the horizontal fork extends upwardly and is preferably itself forked, there being two cross pins extending laterally between the forks thereof with the leaf spring disposed between the

two cross pins.

The leaf spring may be movably engaged with the crown or another part of the vertical fork in the manner described in our said Specification 521,130.

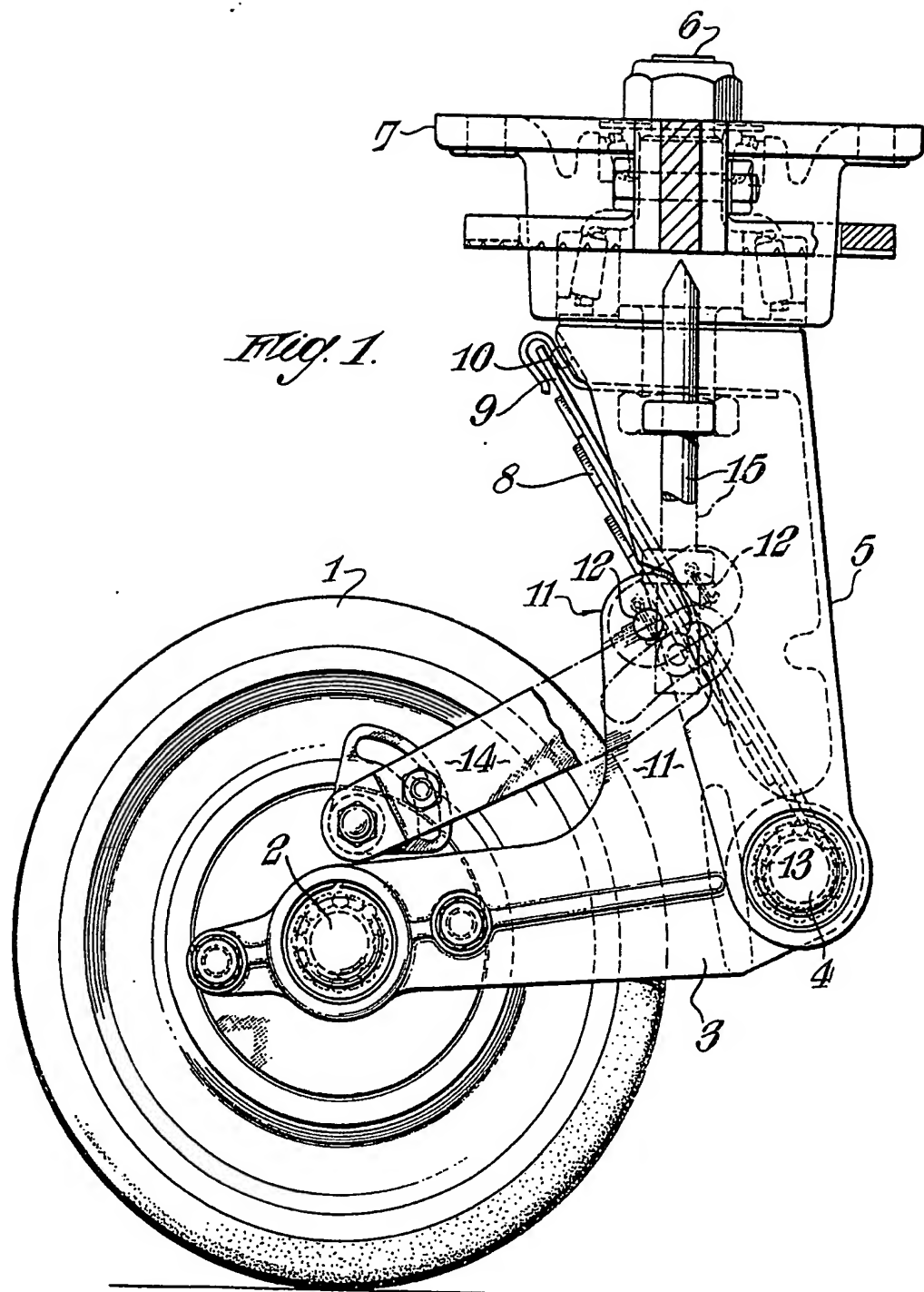
The lower end of the leaf spring preferably has a hook embracing in pivotal manner the pivot pin connecting the vertical and horizontal forks, the hook embracing more than half of the circumference of the said pivot pin so as to be retained thereon.

The present invention is advantageous in that it provides for evenly balanced stress-

ing of the leaf spring throughout its length when under load and it is safe and efficient in operation. There is greater flexibility for a given load compared with that experienced with an equivalent spring device according to our said prior specification.

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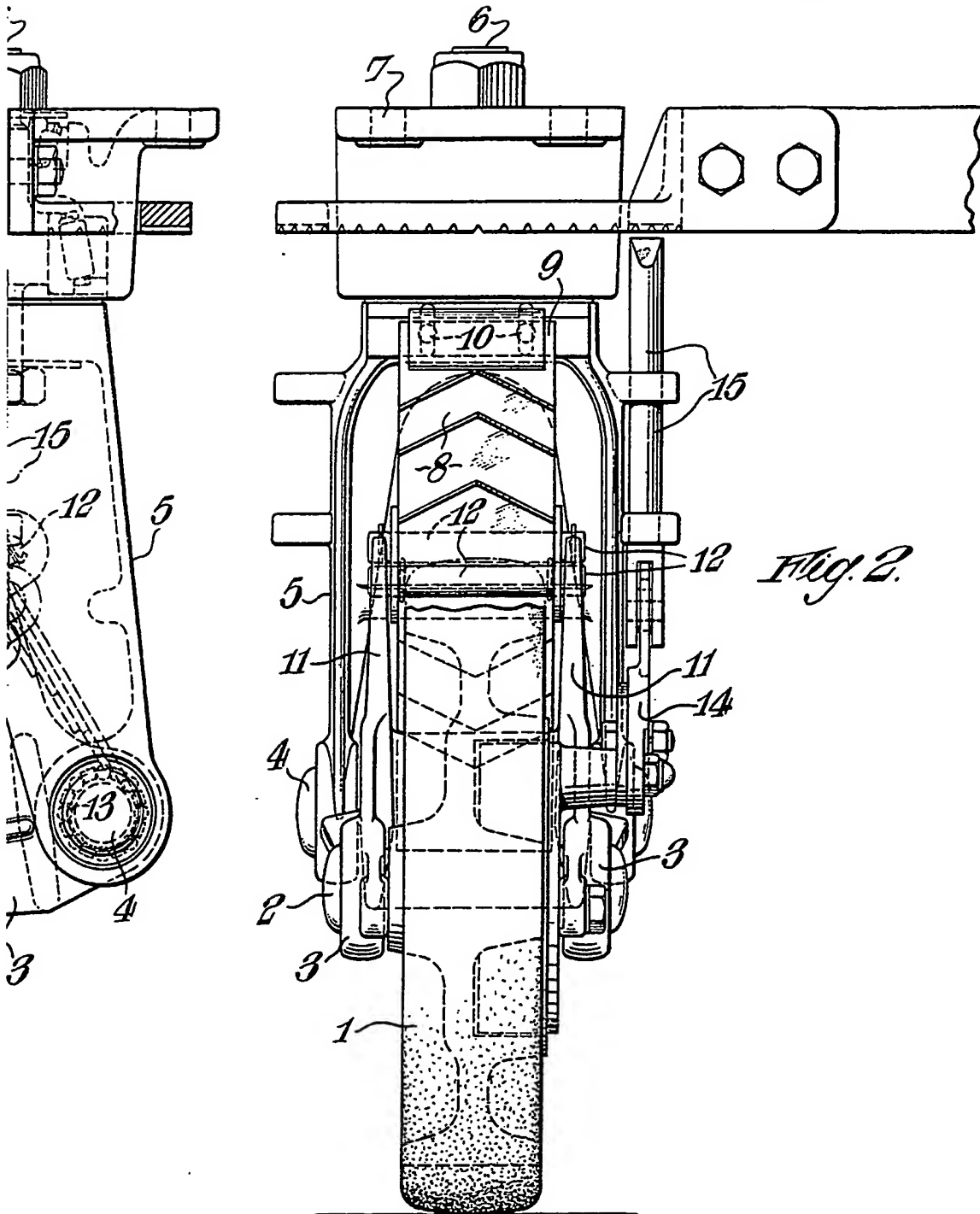


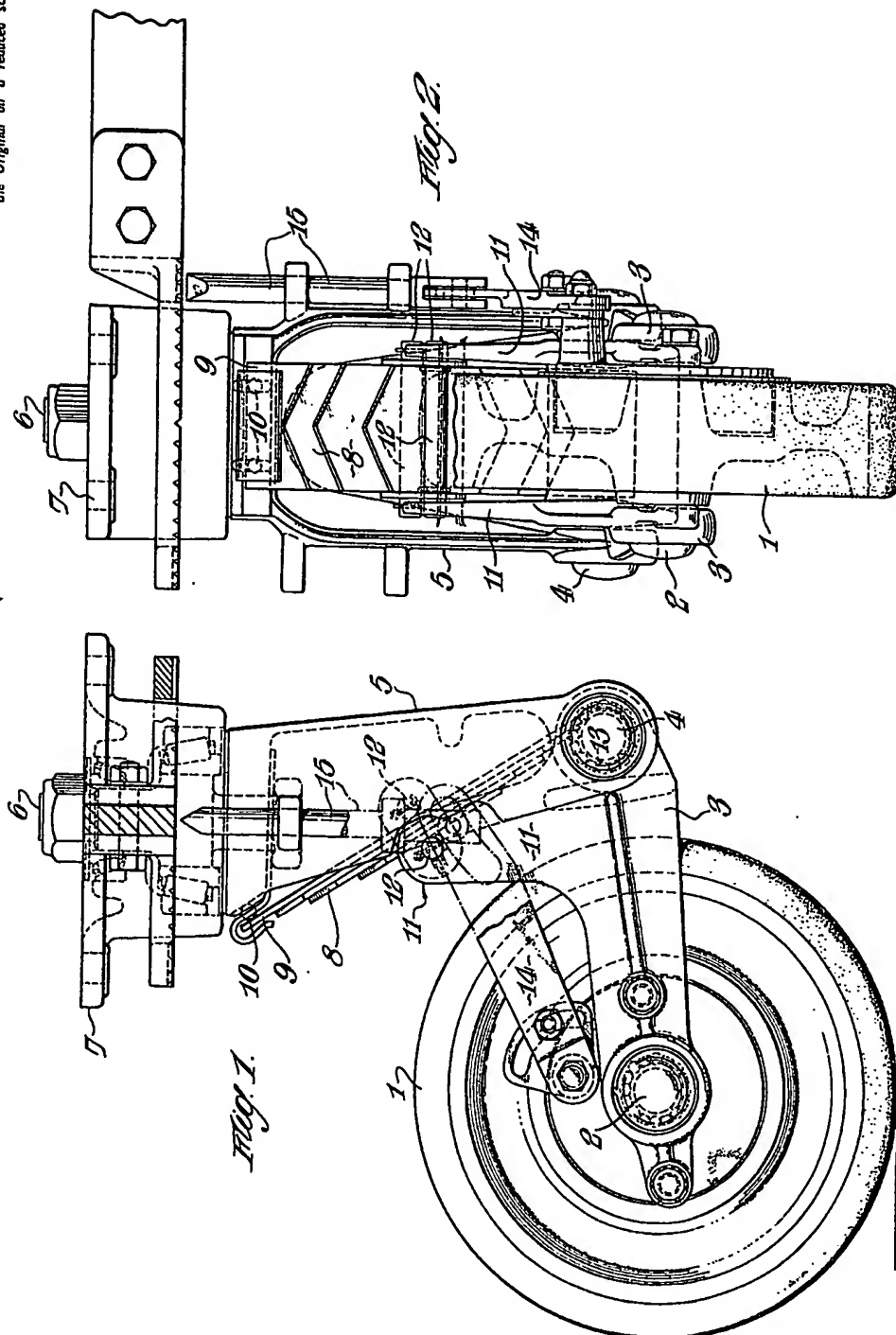
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COMPLETE SPECIFICATION

1 SHEET

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